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Claims

10 1. A fluid power linear drive comprising a drive
housing (1), in which at least one housing chamber (4) is
located having a linear extent, in which at least one
linearly movable piston (5) is placed, said piston being
kinematically coupled with a force output part (8) having
15 at least one force output section (7) accessible from
outside the drive housing (1), characterized in that the
drive housing (1) possesses two housing parts (2 and 3)
placed together alongside each other, which at the
mutually facing joint faces (16 and 17) are provided with
20 half chambers (18a and 18b) constituted by elongated
groove-like recesses, such half chambers being
complementary to each other to form the at least one
housing chamber (4).

25 2. The linear drive as set forth in claim 1,
characterized in that the running face for the piston (5)
is directly constituted by the wall of the housing chamber
(4).

30 3. The linear drive as set forth in claim 1,
characterized in that the running face for the piston (5)
is constituted by a bearing bushing (23) inserted in the
housing chamber (4), such bushing preferably consisting of
metal.

35 4. The linear drive as set forth in claim 3,
characterized in that the bushing (23) is provided on the
outer periphery with surrounding seal (24) for sealing

engagement with the wall of the housing chamber (4).

5 5. The linear drive as set forth in any one of the
claims 1 through 4, characterized by a design as a piston
rod linear drive whose force output part (8) is in the
form of a piston rod (12) connected with the piston (5),
such rod projecting through a passage opening (14), such
opening being placed in front of the housing chamber
axially, the passage opening (14) being constituted by two
10 mutually complementary passage opening halves (22a and
22b) on the mutually facing joint faces (16 and 17) at the
two housing parts (2 and 3).

15 6. The linear drive as set forth in claim 6,
characterized in that in the passage opening (14) a
bearing bushing (21) and/or annular sealing and stripping
means (26) for the piston rod (12) are arranged.

20 7. The linear drive as set forth in any one of the
claims 1 through 6, characterized in that as an axial
extension of the housing chamber (4) terminal position
damping chambers (45) are arranged for terminal damping of
the piston (5), such chambers being constituted by damping
chamber halves (46a and 46b), which fit together in a
25 complementary fashion, in the mutually facing joint faces
(16 and 17) of the two housing parts (2 and 3).

30 8. The linear drive as set forth in any one of the
claims 1 through 7, characterized in that in the joint
region (15) of the two housing parts one or more
respective jointly delimited cavities (27) are formed,
which are provided as fluid ducts (32) and/or as
electrical conductor channels (33) and/or as accommodating
chambers (34) for valve means (35) and/or for sensor means
35 (36) and/or for other functional components (37) for the
operation of the linear drive.

9. The linear drive as set forth in claim 8,
characterized in that for the formation of one or more
cavities (27) mutually facing recesses (28a and 28b) are
provided which are complementary in a paired manner, on
5 the two joint faces (16 and 17) of the housing parts (2
and 3), more especially for the formation of accommodating
chambers (34) for valve means (35) and/or for sensor means
(36).

10 10. The linear drive as set forth in claim 8 or in
claim 9, characterized in that for the formation of one or
more cavities (27) a recess (31a) formed in the joint face
of the one housing part is covered over by a non-recessed
region (31b) of the joint face of the other housing part,
15 more especially for the formation of fluid ducts (32)
and/or of electrical conductor channels (33).

20 11. The linear drive as set forth in any one of the
claims 8 through 10, characterized in that the fluid ducts
constituted by one or more cavities (27) extend between
the two working spaces (6a and 6b) separated in the
housing chamber (4) by the piston (5) and at least one
connection opening (38) provided on the outer face of the
drive housing (1).

25 12. The linear drive as set forth in any one of the
claims 8 through 11, characterized in that electrical
conductor channels (33) constituted by one or more
cavities (27) extend between cavities (27) serving as
30 accommodating chamber (34) for electrically operated valve
means (35) and at least one electromechanical connection
means (44) outer face of the drive housing (1).

35 13. The linear drive as set forth in any one of the
claims 8 through 12, characterized in that the two housing
parts (2 and 3) directly also constitute the housing of at
least one valve, whose functional components are arranged

in a accommodating chamber (34) formed by at least one of one or more cavities.

5 14. The linear drive as set forth in any one of the claims 8 through 13, characterized in that in the at least one cavity cartridge-like valve means (35) are placed.

10 15. The linear drive as set forth in any one of the claims 8 through 14, characterized in that valve means (35) are provided, which define at least one switch valve and/or at least one valve with a continuous characteristic.

15 16. The linear drive as set forth in any one of the claims 8 through 15, characterized in that in the case of one piston (5) provided with a piston rod (12) at least one accommodating chamber (34) for the accommodation of valve means (35) is provided on the rear side, opposite to the piston rod (12), of the housing chamber (4).

20 17. The linear drive as set forth in any one of the claims 8 through 16, characterized in that the sensor means (36) accommodated in one or more cavities (27) are in the form of pressure sensor means and/or position sensor means.

30 18. The linear drive as set forth in any one of the claims 8 through 17, characterized in that the at least one chamber (34) provided to accommodate sensor means (36) is arranged in the joint region (15) of the housing parts (2 and 3) alongside the housing chamber (4).

35 19. The linear drive as set forth in any one of the claims 1 through 18, characterized in that the housing parts (2 and 3) at least adjacent to their half chambers (18a and 18b) defining the housing chamber (4) are respectively in the form of half shells.

20. The linear drive as set forth in any one of the claims 1 through 19, characterized in that the in the joint region (15) a plurality of housing chambers (4) are defined, which are placed alongside each other and respectively provided with at least one piston (5).

21. The linear drive as set forth in any one of the claims 1 through 20, characterized in that the two housing parts (2 and 3) consist of plastic.

22. The linear drive as set forth in any one of the claims 1 through 21, characterized in that the two housing parts (2 and 3) are in the form of plastic castings or more particularly injection moldings.

23. The linear drive as set forth in any one of the claims 1 through 20, characterized in that the two housing parts (2 and 3) are in the form of foamed plastic components.

24. The linear drive as set forth in any one of the claims 1 through 23, characterized in that the two terminal end walls (13a and 13b) of the at least one housing chamber (4) are directly formed by the two housing parts (2 and 3) placed on each other.

25. The linear drive as set forth in any one of the claims 1 through 24, characterized in that the two housing parts (2 and 3) are bonded or welded at their joint faces (16 and 17).

26. The linear drive as set forth in any one of the claims 1 through 25, characterized in that electronic control circuitry is arranged on or in the drive housing (1).

27. The linear drive as set forth in any one of the claims 1 through 27, characterized in that all functional components employed for the electrical-fluidic control of the linear drive is integrated in the drive housing (1).

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28. The linear drive as set forth in any one of the claims 1 through 27, characterized in that on the joint faces (16 and 17) of the two housing parts (2 and 3) position securing means (26a and 26b) are provided which are in interlocking engagement with each other.

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